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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/821,387

03/28/2001

Steve Wai Leung Yeung

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05/04/2005

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EXAMINER

NGUYEN, CHANH DUY

ART UNIT

PAPER NUMBER

2675

DATE MAILED: 05/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/821,387

Applicant(s)

YEUNG

Examiner

Chanh Nguyen

Art Unit

2675

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendment filed on February 15, 2005 has been entered and considered by examiner.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 1-3 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Hirakata (U.S. Patent No. 6,496,172 B1).

As to claim 1, Hirakata discloses a method for driving an LCD including providing an LCD with a plurality of columns (signal line 1 to signal line 6), a plurality of rows (scanning line A to scanning line D), and a plurality of pixels (111). Hirakata teach a well known driving the LCD by a multiple pixel inversion technique (e.g., frame inversion shown in Fig.15A) including the step of applying signals of a same polarity to an $n \times m$ pixel matrix (i.e. all pixels P11-P44 are positive polarity + in the first frame) where (n) is an integer from two to a number of scan lines (i.e. 4 scan lines) and (m) is an integer from two to a number of column lines (i.e. 6 column lines), the applied signals to provide a reduced total fringe field effect to maintain contrast and to minimize display flickering (i.e. tone of a display image is clear, the flicker does not become noticeable at about 60H) (see column 9, lines 1-6). Thus, the convention inversion method Figure 15A of

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Hirakata reads on the claimed minimize display flickering and reduce fringe field effect, even it drives at 30 Hz frequency. The claim does not require 60 Hz frequency driving.

While this unlike applicant disclosed device, it reads on broad claimed language.

As to claim 2, the claimed "multiple inversion are adjustable" is broad enough to read on the frame inversion of Hirakata either positive or negative in a whole frame in Fig. 15A or inversion each gate line in each frame in Fig. 15B.

As to claim 3, Hirakata clearly teaches the method being applied to an actively driving miniature TFT LCD (i.e. camera, cell phone); see Figs. 22A-22F.

As to claim 6, the claimed "multiple pixel inversion is applied for two consecutive frames" is so broad that it can read on frame inversion as taught by Hirakata. For example, first frame is positive and second frame is negative (see Fig. 15A).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirakata in view of Hashimoto et al (U.S. Patent no. 6,295,043 B1).

As to claims 4 and 5, note the discussion of Hirakata above, Hirakata does not mention simultaneous inversion plurality of rows. Hashimoto teaches a well-known method of inverting two rows simultaneously (see Figs. 13A-13B). That is g2-g3 are applied positive polarity and g4-g5 are applied negative polarity. Therefore, it would

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have been obvious to one of ordinary skill in the art at the invention was made to have used the method of inverting two rows simultaneously as taught by Hashimoto to the pixel inversion of Hirakata so as to avoid flicker (see column 3, lines 18-41 of Hashimoto).

Response to Arguments

6. Applicant's arguments with respect to claims 1-6 have been considered but are moot in view of the new ground(s) of rejection.

On page 6, applicant argues that Hirakata does not teaches, discloses or suggest by a multiple pixel inversion technique (including the step of applying signals of a same polarity to an $n \times m$ pixel where (n) is an integer from two to a number of scan lines and (m) is an integer from two to a number of column lines, the applied signals to provide a reduced total fringe field effect to maintain contrast and to minimize display flickering.. Examiner disagrees with applicant since Hirakata teaches applying signals of a same polarity (e.g., positive polarity) to an 4 X 6 pixel matrix (see Fig. 15A).

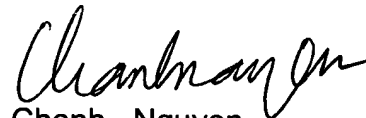
Inquiries

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chanh Nguyen whose telephone number is (571) 272-7772. The examiner can normally be reached on Monday- Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Chanh Nguyen
Primary Examiner
Art Unit 2675



C. Nguyen
April 29, 2005